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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/777,189

02/13/2004

Shigetoshi Wakayama

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05/16/2006

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EXAMINER

PHAM, HOAI V

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/777,189	Applicant(s) WAKAYAMA ET AL.	
	Examiner Hoai v. Pham	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 7-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse species of figure 3 in the reply filed on March 03, 2006 is acknowledged.
2. Claims 7-15 are not under consideration since they are not read on species of figure 3. Claims 7-15 specifically belong to species of figure 9.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Umematsu et al. [U.S. Pat. 6,399,897] previously applied.

With respect to claim 1, Umematsu et al. (fig. 5B, col. 5) discloses a semiconductor device, comprising:

semiconductor substrate (12) (see col. 3, lines 8-9); and

a multilayer interconnection structure formed on said substrate, said multilayer interconnection structure comprising:

a first guard ring (58a) extending continuously in said multilayer interconnection structure along periphery (50) of said semiconductor substrate; and

a second guard ring (58a) extending continuously in said multilayer interconnection structure along said periphery so as to be encircled by said first guard ring, said second guard ring encircling an interconnection pattern inside said multilayer interconnection structure;

said first and second guard rings (58a) being connected with each other mechanically and continuously by a bridging conductor pattern (56a) extending continuously in a band form along a region including said first and second guard rings, when viewed in the direction perpendicular to said semiconductor substrate.

With respect to claim 2, Umematsu et al. discloses that wherein said bridging conductor pattern (56a) does not have any of a gap or an opening (fig. 5B).

With respect to claim 3, Umematsu et al. discloses that wherein said bridging conductor pattern (56a) is provided at plural different positions having different heights as measured from a surface of said semiconductor substrate (fig. 5B).

With respect to claim 4, Umematsu et al. discloses that wherein said bridging conductor pattern (56a) is formed in one or more interlayer insulation films (49a-49i) in said multilayer interconnection structure.

With respect to claim 6, Umematsu et al. discloses that wherein said multilayer interconnection structure has a layered structure in which a plurality of interlayer

insulation films (49a-49i) each including an interconnection layer corresponding thereto are stacked, and wherein an interconnection layer formed in one interlayer insulation film of said plural interlayer insulation films is connected to an underlying interconnection layer by a via-plug (58, 58a), each of said first and second guard rings having a layered structure identical to that of said multilayer interconnection structure, said bridging conductor pattern being formed at a height identical to that of the interconnection layer in said interlayer insulation film in which said bridging conductor pattern is formed (see fig. 5b).

### ***Response to Arguments***

5. Applicant's arguments filed 11/18/2005 have been fully considered but they are not persuasive.

Applicant argues that Umematsu et al. does not disclose "a first and second guard rings (58a) being connected with each other mechanically and continuously by a bridging conductor pattern (56a) extending continuously in a band form along a region including said first and second guard rings, when viewed in the direction perpendicular to said semiconductor substrate".

Applicant's argument is not persuasive because Umematsu et al. clearly disclose a first and second guard rings (58a) being connected with each other mechanically and continuously by a bridging conductor pattern (56a) extending continuously in a band form along a region including said first and second guard rings, when viewed (cross

sectional view) in the direction perpendicular to said semiconductor substrate (see fig. 5B).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai v. Pham whose telephone number is 571-272-1715. The examiner can normally be reached on M-F.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2814

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HOAI PHAM  
PRIMARY EXAMINER